WEEDCAST Predictions Save Farmers Money

Corn farmers in the Morris area of west central Minnesota see a glimpse of the future whenever they click on their computer's mouse or leaf through their local newspaper for weed forecasts.

For example: from late April until early July 1996, the Morris Sun weekly paper carried charts showing height predictions for 11 common weeds. The last forecast for weed seedling emergence made by using weather data from the Morris area was posted on the Internet on July 1. It showed from 90- to 100-percent sprouting of pigweed and lambsquarters for farms in the area. The information helped area farmers plan their weed control strategies.

"We're working to expand the forecasts nationwide," says Frank Forcella. He is the ARS agronomist who developed the weed forecasting computer model, called WeedCast, that generates the predictions.

"Right now, we just share the model's results on the Internet or in the local newspaper. We're working on putting the model itself on the net so farmers everywhere can type in their local weather data and get predictions for their farms.

"We're also considering adapting the model to user-friendly software that would be distributed by us or a private company," Forcella adds.

The forecasts can be used with other farm management aids, such as the WeedSim model developed by the University of Minnesota in conjunction with ARS. That model advises farmers if and when to use herbicides and mechanical weed control based on predicted weed dormancy, emergence, and speed of growth.

In tests at Morris, Forcella and his colleagues have grown corn and soybeans with fewer herbicides because predictions reassured them that the weed numbers wouldn't harm yields. Their profits were $20 an acre more than where standard weed control practices were used. Occasionally, there were slightly more weeds, but never enough to affect yields in the current or following year.

When combined with information on yield losses from weeds and delayed planting, WeedCast predictions help determine the best compromise date for seedbed cultivation to substantially destroy weeds, instead of using herbicide before planting.

Forcella has worked closely in development and implementation of these models with weed scientists and agricultural economists at the University of Minnesota, in cooperation with their counterparts in most of the Corn Belt states. Minnesota's Agricultural Utilization Research Institute also helped fund this research.—By **Don Comis,** ARS.

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